



CINT2000 Result

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Fujitsu Limited
PRIMEPOWER450 (1320MHz)

SPECint_rate2000 = 39.8

SPECint_rate_base2000 = 34.5

SPEC license #: 19 Tested by: Fujitsu Limited Test date: Dec-2003 Hardware Avail: Feb-2004 Software Avail: Dec-2003

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.zip	4	225	28.8	4	203	32.1
175.vpr	4	219	29.6	4	197	33.1
176.gcc	4	139	36.6	4	125	40.8
181.mcf	4	331	25.2	4	240	34.7
186.crafty	4	119	38.8	4	116	39.9
197.parser	4	274	30.4	4	251	33.3
252.eon	4	230	26.3	4	145	41.5
253.perlbnk	4	210	39.7	4	209	40.0
254.gap	4	164	31.2	4	150	34.0
255.vortex	4	146	60.2	4	113	77.7
256.bzip2	4	201	34.7	4	191	36.5
300.twolf	4	309	45.0	4	278	50.1

Hardware

CPU: SPARC64 V
 CPU MHz: 1320
 FPU: Integrated
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip
 CPU(s) orderable: 1 to 4 (increments of 1)
 Parallel: None
 Primary Cache: 128KBI + 128KBD on chip
 Secondary Cache: 2MB(I+D) on chip
 L3 Cache: None
 Other Cache: None
 Memory: 8192MB (512MB x 16)
 Disk Subsystem: 1 x 36.4GB SCSI (10000rpm)
 Other Hardware: None

Software

Operating System: Solaris 8 2/02 with current patches (see notes)
 Compiler: Fujitsu Parallelnavi 2.3
 Sun ONE Studio 8
 Sun Performance Library 8
 File System: ufs
 System State: multi user

Notes/Tuning Information

```
FDO: (for Parallelnavi 2.3)
fdo_pre0=rm -rf `pwd`/*.f.d
PASS1=-Kpg
PASS2=-Kpu=$(EXEBASE).fbk
FDO: (for Sun ONE Studio 8)
fdo_pre0=rm -rf ./feedback.profile ./SunWS_cache
PASS1=-xprofile=collect:./feedback
PASS2=-xprofile=use:./feedback
```

```
Integer base flags:
(using C compiler of Sun ONE Studio 8)
-fast -xtarget=ultra3cu -xipo=2 ONESTEP=yes FDO
(using C++ compiler of Sun ONE Studio 8)
-fast -xchip=ultra3cu -xarch=v8plusb -xipo=2 ONESTEP=yes
```

```
Integer peak flags:
(using C compiler of Parallelnavi 2.3)
300.twolf: -Kfast_GP2=3 -O5 -KGREG,largepage,memalias,cfunc,
use_rodata,xi=20 ONESTEP=yes FDO
```



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(using C compiler of Sun ONE Studio 8)

164.gzip: -xO5 -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xalias_level=std -xipo=2 -xprefetch -W2,-whole,-Ainline
-Wc,-Qiselect-funcalign=64 ONESTEP=yes FDO

175.vpr: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xarch=v8plus -xchip=ultra -xalias_level=std -xdepend -xipo=2
-xprefetch=latx:1.6 -xsfpcnst -W2,-whole -Wc,-Qeps:do_spec_load=1
-Wc,-Qeps:enabled=1,-Qeps:rp_filtering_margin=100,
-Qiselect-funcalign=64 -lprism32 ONESTEP=yes FDO

176.gcc: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xipo=2 -xprefetch=latx:1.6 -W2,-whole
-Wc,-Qgsched-T4,-Qgsched-trace_late=1,-Qiselect-funcalign=64
-ll2amm ONESTEP=yes FDO

181.mcf: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xchip=ultra2 -xdepend -xipo=2 -W2,-Apf:l1list=3:noinnerl1list
-Wc,-Qeps:enabled=1,-Qms_pipe-pref -lprism32 ONESTEP=yes FDO

186.crafty: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xarch=v8plusa -xalias_level=strong -xipo=2
-xprefetch=latx:0.8 -W2,-Ashort_ldst -Wc,-Qiselect-funcalign=64
ONESTEP=yes FDO

197.parser: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xalias_level=strong -xdepend -xipo=2 -xprefetch=latx:0.8
-xregs=syst -Wc,-Qgsched-T6,-Qgsched-trace_late=1,
-Qipa:valueprediction,-Qiselect-funcalign=64
-lprism32 ONESTEP=yes FDO

253.perlbnk: -dn -xO5 -xarch=v8plus -xchip=ultra3 -xcache=128/64/2:2048/64/4
-xipo=2 -Wc,-Qiselect-funcalign=64
ONESTEP=yes FDO

254.gap: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xalias_level=strong -xipo=2 -xprefetch_level=3 -xprefetch=latx:2.0
-xvector -W2,-Abcopy,-whole -Wc,-Qgsched-T4,-Qgsched-trace_late=1,
-Qiselect-funcalign=64 ONESTEP=yes FDO

255.vortex: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xchip=ultra -xdepend -xipo=2 -xrestrict -xprefetch=latx:1.6
-W2,-Aheap,-Ainline:recursion=1:cs=500:irs=6000,-Aunroll,-crit
-W2,-Ms15,-Mt300,-Mr6000,-reroll=1 -Wc,-Qdepgraph-early_cross_call=1
-Wc,-Qeps:do_spec_load=1,-Qeps:enabled=1,-Qiselect-funcalign=64
-Wc,-Qpeep-Sh0 -ll2amm -lprism32 ONESTEP=yes FDO

256.bzip2: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xipo -xalias_level=strong -xdepend -xregs=syst -xrestrict
-xprefetch=latx:0.8 -W2,-Abopt -Wc,-Qiselect-funcalign=64
-Wc,-Qeps:enabled ONESTEP=yes FDO

(using C++ compiler of Sun ONE Studio 8)

252.eon: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-noex -xalias_level=compatible -xipo=2
-xprefetch=latx:0.8 -xregs=syst -xunroll=3
-Qoption cg -Qeps:enabled=1,-Qeps:ws=32,-Qgsched-T4,
-Qgsched-trace_late=1,-Qiselect-funcalign=64
-Qoption iropt -Mt2000 -lmopt ONESTEP=yes FDO

Portability:

176.gcc: -Dalloca=__builtin_alloca -DHOST_WORDS_BIG_ENDIAN
186.crafty: -DSUN
252.eon: -library=iostream
253.perlbnk: -DSPEC_CPU2000_SOLARIS
254.gap: -DSYS_IS_USG -DSYS_HAS_TIME_PROTO -DSYS_HAS_SIGNAL_PROTO



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-DSYS_HAS_CALLOC_PROTO -DSYS_HAS_IOCTL_PROTO

System Tunables:

(for /etc/system)

```
set consistent_coloring=1
set shmsys:shminfo_shmmax=2147483648, set shmsys:shmmani=256,
set shmsys:shminfo_shmseg=400, set shmsys:shmmin=1
set tune_t_fsflushr = 86400
set autoup = 86400
```

(for /etc/opt/FJSVpnm/lpg.conf)

```
TSS=1024M, SHMSEGSIZE=256M
```

Shell Environments:

```
Stack size set to unlimited via "ulimit -s unlimited"
LD_LIBRARY_PATH="/opt/SUNWspro/prod/lib/v8plusb"
PRISM_HEAP=268435456
PRISM_MODE=2
```

Sun ONE Studio 8, posted at URL <http://www.sun.com/software/sundev/suncc/> was used for this submission.

All patches for Solaris 8 posted at

http://access1.sun.com/patch.public/cgi-bin/show_list.cgi/wrk/Sun_ONE_Studio_8_SPARC_SunOS_5.8

as of date 2003/12/17 were applied: 108434-13, 108435-13, 111697-04, 111721-04.

Processes were bound to CPUs using "submit=pbind"